

OF DIAGNOSING BODY WEIGHT--.

IN THE CLAIMS:

Please amend the claims as follows:

C / 29. (Twice Amended) An oligonucleotide hybridizable under stringent conditions to the nucleic acid molecule encoding on expression a leptin receptor polypeptide selected from the group consisting of:

a. a DNA molecule of SEQ ID NO:1, 3, 5, 7, or 9;

b. a DNA molecule complementary to the DNA molecule defined in (a);

[c. a DNA molecule which hybridizes to the DNA molecule of (a) or (b), or a hybridizable fragment thereof;]

c [d]. a DNA molecule which is identifiable with a polymerase chain reaction (PCR) probe selected from group consisting of a probe for clone 7 (forward primer SEQ ID NO:42 and reverse primer SEQ ID NO:43), a probe for clone 11 (forward primer SEQ ID NO:44 and reverse primer SEQ ID NO:45), and both clone 7 and clone 11; and

[e]. a DNA molecule that codes on expression for the polypeptide encoded by any of the foregoing DNA molecules.

part D2 30. (Twice Amended) An oligonucleotide hybridizable under stringent conditions to the nucleic acid molecule which codes on expression for a polypeptide selected from the group consisting of:

Cl
a [f]. a leptin receptor selected from the group consisting of OB-Ra, OB-Rb, OB-Rc, OB-Rd, and OB-Re, or allelic variants thereof;

b [g]. a leptin receptor selected from the group consisting of:

i. N-terminal corresponding to OB-Ra through Lys⁸⁸⁹ and C-terminal corresponding to a C-terminal selected from the group consisting of OB-Rb, OB-Rc, and OB-Rd after Lys⁸⁸⁹;

ii. N-terminal corresponding to OB-Rb or OB-Rc through Lys⁸⁸⁹, and C-terminal corresponding to OB-Ra or OB-Rd after Lys⁸⁸⁹;

iii. N-terminal corresponding to OB-Rd through Lys⁸⁸⁹, and C-terminal corresponding to OB-Ra, OB-Rb, or OB-Rc after Lys⁸⁸⁹;

iv. N-terminal corresponding to SEQ ID NO:55 from Pro⁶⁶⁴ to Lys⁸⁸⁹, and C-terminal corresponding to OB-Ra, OB-Rb, OB-Rc, or OB-Rd after Lys⁸⁸⁹;

v. N-terminal corresponding to SEQ ID NO:55 from Met⁷³³ to Lys⁸⁸⁹, and C-terminal corresponding to OB-Ra, OB-Rb, OB-Rc, or OB-Rd after Lys⁸⁸⁹;

vi. N-terminal selected from the group consisting of OB-Ra, OB-Rb, OB-Rd, and SEQ ID NO:55 from Pro⁶⁶⁴ through His⁷⁹⁶, and OB-Re from His⁷⁹⁶; and

vii. N-terminal corresponding to SEQ ID NO:55 from Met⁷³³ to His⁷⁹⁶, and OB-Re from His⁷⁹⁶; [and]

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[viii. allelic variants of any of subparts i. through vii. above;]

c [h]. a leptin receptor wherein

- i. the N-terminal sequence is selected from the group consisting of
 - (1) amino acid residues 1-889;
 - (2) amino acid residues 23-889;
 - (3) amino acid residues 28-889;
 - (4) amino acid residues 133-889;
 - (5) amino acid residues 733-889;
 - (6) amino acid residues 1-796;
 - (7) amino acid residues 23-796;
 - (8) amino acid residues 28-796;
 - (9) amino acid residues 28-796 preceded by an N-terminal Asp-Pro dipeptide;
 - (10) amino acid residues 133-796; and
 - (11) amino acid residues 733-796; and
 - [12) allelic variants of any of (1) through (11) above; and]
- ii. the C-terminal sequence is selected from the group consisting of
 - (1) SEQ ID NO:11;
 - (2) SEQ ID NO:12;
 - (3) SEQ ID NO:13;
 - (4) SEQ ID NO:14; and
 - (5) SEQ ID NO:15 after His⁷⁹⁶;

d [i]. a leptin receptor having an amino acid sequence selected from the group consisting of

C1

- i. Asp-Arg-Trp-Gly-Ser-Tyr⁴²⁰ (SEQ ID NO:77)--> Pro⁶⁴¹;
- ii. Asp-Arg-Trp-Gly-Ser-Ser¹¹⁸ (SEQ ID NO:78)--> Pro⁶⁴¹;
- iii. Asp-Arg-Trp-Gly-Ser-Leu¹²³ (SEQ ID NO:79) -->Val³³¹; and

e [j]. a leptin receptor as described in (a)-(d) above in which a cysteine is substituted with an amino acid selected from the group consisting of serine, threonine, and alanine;

wherein the numbering is based on the amino acid sequence of SEQ ID NO:55.

C2
sub D3

67. (Amended) A method for diagnosing body weight abnormalities in a mammal comprising detecting splice variants of OB-R in a patient sample comprising contacting a sample suspected of containing splice variants of OB-R with an oligonucleotide hybridizable under stringent conditions to the nucleic acid molecule which codes on expression for a polypeptide selected from the group consisting of:

- a. a leptin receptor selected from the group consisting of OB-Ra, OB-Rb, OB-Rc, OB-Rd, and OB-Re, or allelic variants thereof;
- b. a leptin receptor selected from the group consisting of:
 - i. N-terminal corresponding to OB-Ra through Lys⁸⁸⁹ and C-terminal corresponding to a C-terminal selected from the group consisting of OB-Rb, OB-Rc, and OB-Rd after Lys⁸⁸⁹;
 - ii. N-terminal corresponding to OB-Rb or OB-Rc through Lys⁸⁸⁹, and

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- Sub P3*
- C-terminal corresponding to OB-Ra or OB-Rd after Lys⁸⁸⁹;
- iii. N-terminal corresponding to OB-Rd through Lys⁸⁸⁹, and C-terminal corresponding to OB-Ra, OB-Rb, or OB-Rc after Lys⁸⁸⁹;
- iv. N-terminal corresponding to SEQ ID NO:55 from Pro⁶⁶⁴ to Lys⁸⁸⁹, and C-terminal corresponding to OB-Ra, OB-Rb, OB-Rc, or OB-Rd after Lys⁸⁸⁹;
- v. N-terminal corresponding to SEQ ID NO:55 from Met⁷³³ to Lys⁸⁸⁹, and C-terminal corresponding to OB-Ra, OB-Rb, OB-Rc, or OB-Rd after Lys⁸⁸⁹;
- vi. N-terminal selected from the group consisting of OB-Ra, OB-Rb, OB-Rd, and SEQ ID NO:55 from Pro⁶⁶⁴ through His⁷⁹⁶, and OB-Re from His⁷⁹⁶; and
- vii. N-terminal corresponding to SEQ ID NO:55 from Met⁷³³ to His⁷⁹⁶, and OB-Re from His⁷⁹⁶; [and]
- [viii. allelic variants of any of subparts i. through vii. above;]
- c. a leptin receptor wherein
- i. the N-terminal sequence is selected from the group consisting of
- (1) amino acid residues 1-889;
 - (2) amino acid residues 23-889;
 - (3) amino acid residues 28-889;
 - (4) amino acid residues 133-889;

Dab D3

C2

- (5) amino acid residues 733-889;
 - (6) amino acid residues 1-796;
 - (7) amino acid residues 23-796;
 - (8) amino acid residues 28-796;
 - (9) amino acid residues 28-796 preceded by an N-terminal Asp-Pro dipeptide;
 - (10) amino acid residues 133-796; and
 - (11) amino acid residues 733-796; and
 - [**(12)** allelic variants of any of (1) through (11) above; and]
- ii. the C-terminal sequence is selected from the group consisting of
- (1) SEQ ID NO:11;
 - (2) SEQ ID NO:12;
 - (3) SEQ ID NO:13;
 - (4) SEQ ID NO:14; and
 - (5) SEQ ID NO:15 after His⁷⁹⁶;

d. a leptin receptor having an amino acid sequence selected from the group consisting of

- i. Asp-Arg-Trp-Gly-Ser-Tyr⁴²⁰ (SEQ ID NO:77) -->Pro⁶⁴¹;
- ii. Asp-Arg-Trp-Gly-Ser-Ser¹¹⁸ (SEQ ID NO:78) -->Pro⁶⁴¹;
- iii. Asp-Arg-Trp-Gly-Ser-Leu¹²³ (SEQ ID NO:79) -->Val³³¹; and

e. a leptin receptor as described in (a)-(d) above in which a cysteine is substituted with an amino acid selected from the group consisting of serine, threonine, and alanine;

b6 b7 D3 C2
wherein the numbering is based on the amino acid sequence of SEQ ID NO:55.

C3
b6 b7 D4
69. (Amended) A method for measuring the expression of splice variants of OB-R in a patient sample comprising contacting a sample suspected of containing splice variants of OB-R with a oligonucleotide hybridizable under stringent conditions to the nucleic acid molecule which codes on expression for a polypeptide selected from the group consisting of:

- a. a leptin receptor selected from the group consisting of OB-Ra, OB-Rb, OB-Rc, OB-Rd, and OB-Re, or allelic variants thereof;
- b. a leptin receptor selected from the group consisting of:
 - i. N-terminal corresponding to OB-Ra through Lys⁸⁸⁹ and C-terminal corresponding to a C-terminal selected from the group consisting of OB-Rb, OB-Rc, and OB-Rd after Lys⁸⁸⁹;
 - ii. N-terminal corresponding to OB-Rb or OB-Rc through Lys⁸⁸⁹, and C-terminal corresponding to OB-Ra or OB-Rd after Lys⁸⁸⁹;
 - iii. N-terminal corresponding to OB-Rd through Lys⁸⁸⁹, and C-terminal corresponding to OB-Ra, OB-Rb, or OB-Rc after Lys⁸⁸⁹;
 - iv. N-terminal corresponding to SEQ ID NO: 55 from Pro⁶⁶⁴ to Lys⁸⁸⁹, and C-terminal corresponding to OB-Ra, OB-Rb, OB-Rc, or OB-Rd after Lys⁸⁸⁹;
 - v. N-terminal corresponding to SEQ ID NO:55 from Met⁷³³ to Lys⁸⁸⁹, and C-terminal corresponding to OB-Ra, OB-Rb, OB-Rc, or OB-Rd after Lys⁸⁸⁹;

sub D4

vi. N-terminal selected from the group consisting of OB-Ra, OB-Rb, OB-Rd, and SEQ ID NO:55 from Pro⁶⁶⁴ through His⁷⁹⁶, and OB-Re from His⁷⁹⁶; and

vii. N-terminal corresponding to SEQ ID NO:55 from Met⁷³³ to His⁷⁹⁶, and OB-Re from His⁷⁹⁶; [and]

[viii. allelic variants of any of subparts i) through vii) above;]

c. a leptin receptor wherein

i. the N-terminal sequence is selected from the group consisting of

- (1) amino acid residues 1-889;
- (2) amino acid residues 23-889;
- (3) amino acid residues 28-889;
- (4) amino acid residues 133-889;
- (5) amino acid residues 733-889;
- (6) amino acid residues 1-796;
- (7) amino acid residues 23-796;
- (8) amino acid residues 28-796;
- (9) amino acid residues 28-796 preceded by an N-terminal Asp-Pro dipeptide;
- (10) amino acid residues 133-796; and
- (11) amino acid residues 733-796; and
- (12) allelic variants of any of subparts (1) through (11) above; and]

ii. the C-terminal sequence is selected from the group consisting of

- (1) SEQ ID NO:11;
- (2) SEQ ID NO:12;
- (3) SEQ ID NO:13;

C3
Rb D4

- (4) SEQ ID NO:14; and
(5) SEQ ID NO:15 after His⁷⁹⁶;

d. a leptin receptor having an amino acid sequence selected from the group consisting of

- i. Asp-Arg-Trp-Gly-Ser-Tyr⁴²⁰ (SEQ ID NO:77) -->Pro⁶⁴¹;
- ii. Asp-Arg-Trp-Gly-Ser-Ser¹¹⁸ (SEQ ID NO:78) -->Pro⁶⁴¹;
- iii.. Asp-Arg-Trp-Gly-Ser-Leu¹²³ (SEQ ID NO:79) -->Val³³¹; and

e. a leptin receptor as described in (a)-(d) above in which a cysteine is substituted with an amino acid selected from the group consisting of serine, threonine, and alanine;

wherein the numbering is based on the amino acid sequence of SEQ ID NO:55.

REMARKS

The foregoing amendments and the following remarks are submitted in response to the communication dated November 22, 2000.

The Examiner has objected to the title because it is not descriptive and suggests a new title. Applicants have amended the title as suggested by the Examiner.

Status of the Claims

Claims 29-33 and 67-73 are pending in the application. Claims 29, 30, 67 and 69